



Sprinkler System Checklist

Commercial Buildings



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A.	GENERAL	NOT SHOWN	INCORRECT	COMPLETED																																								
1.	Current flow test (within 6 months of 1 st submittal) on City of Scottsdale form Fire Hydrant Flow Test Summary (www.cityofscottsdale.gov – search forms) and signed by a qualified Arizona State Registrant (www.btr.state.az.us) or NICET III CET (www.nicet.org) minimum. 14.1.3 (10 & 43), 14.1.4.3 (50)*, 14.2.1, A.15.2.1.	<input type="checkbox"/>	<input type="checkbox"/>	_____																																								
2.	City approved civil plan set (minimum – signed cover sheet and utility sheet) including DR case number. 14.1.4.3 (46)*. (DR case numbers: search www.scottsdaleaz.gov – My Neighborhood maps, or Case File Search - Planning, Building & Zoning).	<input type="checkbox"/>	<input type="checkbox"/>	_____																																								
3.	Manufacturer's data sheets/specification sheets for sprinkler heads pumps, backflow, etc. 14.1.4*.	<input type="checkbox"/>	<input type="checkbox"/>	_____																																								
B.	PLANS																																											
1.	Complete Site Plan, coordinated with Civil/Improvement plans, including locations, sizes and materials of fire lines, exterior hose valves & FDC. 8.16.2.2, 10.1, 14.1.3 (28)(44), 14.1.4.3 (45)*.	<input type="checkbox"/>	<input type="checkbox"/>	_____																																								
2.	Piping plans & full height cross sections of adequate complexity, including: 14.1.3, IBC106.1.1.1. <table><tr><td><input type="checkbox"/> Scale</td><td><input type="checkbox"/> North Arrow</td><td><input type="checkbox"/> Dimension</td><td><input type="checkbox"/> Head Locations</td></tr><tr><td colspan="4"><input type="checkbox"/> Piping locations, types, sizes & lengths (center to center)</td></tr><tr><td colspan="2"><input type="checkbox"/> Hangar locations & details</td><td colspan="2"><input type="checkbox"/> Spare heads & cabinet</td></tr><tr><td colspan="2"><input type="checkbox"/> Riser location</td><td colspan="2"><input type="checkbox"/> FDC Connection to system location</td></tr><tr><td colspan="4"><input type="checkbox"/> Hose valve locations & connection to system locations</td></tr><tr><td colspan="2"><input type="checkbox"/> Location size of concealed spaces</td><td colspan="2"><input type="checkbox"/> Unsprinklered compartments</td></tr><tr><td colspan="4"><input type="checkbox"/> Location sizes of closets, pantries, restrooms</td></tr><tr><td colspan="2"><input type="checkbox"/> Partitions/walls & openings</td><td colspan="2"><input type="checkbox"/> Elevations/ceiling heights</td></tr><tr><td><input type="checkbox"/> Slopes</td><td><input type="checkbox"/> Obstructions</td><td colspan="2"><input type="checkbox"/> Construction members</td></tr><tr><td><input type="checkbox"/> Calc nodes</td><td><input type="checkbox"/> Calc areas identified</td><td colspan="2"><input type="checkbox"/> Calc areas summaries</td></tr></table>	<input type="checkbox"/> Scale	<input type="checkbox"/> North Arrow	<input type="checkbox"/> Dimension	<input type="checkbox"/> Head Locations	<input type="checkbox"/> Piping locations, types, sizes & lengths (center to center)				<input type="checkbox"/> Hangar locations & details		<input type="checkbox"/> Spare heads & cabinet		<input type="checkbox"/> Riser location		<input type="checkbox"/> FDC Connection to system location		<input type="checkbox"/> Hose valve locations & connection to system locations				<input type="checkbox"/> Location size of concealed spaces		<input type="checkbox"/> Unsprinklered compartments		<input type="checkbox"/> Location sizes of closets, pantries, restrooms				<input type="checkbox"/> Partitions/walls & openings		<input type="checkbox"/> Elevations/ceiling heights		<input type="checkbox"/> Slopes	<input type="checkbox"/> Obstructions	<input type="checkbox"/> Construction members		<input type="checkbox"/> Calc nodes	<input type="checkbox"/> Calc areas identified	<input type="checkbox"/> Calc areas summaries		<input type="checkbox"/>	<input type="checkbox"/>	_____
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3.	Sprinkler head legend, per system, including: 6.2.2, 6.2.3, 14.1.3 (12). <table><tr><td><input type="checkbox"/> Manufacturer</td><td><input type="checkbox"/> Model</td><td><input type="checkbox"/> SIN</td><td><input type="checkbox"/> Type</td></tr><tr><td><input type="checkbox"/> K-factor</td><td><input type="checkbox"/> Orifice</td><td><input type="checkbox"/> Temperature</td><td><input type="checkbox"/> Quantity</td></tr></table>	<input type="checkbox"/> Manufacturer	<input type="checkbox"/> Model	<input type="checkbox"/> SIN	<input type="checkbox"/> Type	<input type="checkbox"/> K-factor	<input type="checkbox"/> Orifice	<input type="checkbox"/> Temperature	<input type="checkbox"/> Quantity	<input type="checkbox"/>	<input type="checkbox"/>	_____																																
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B. Plans continued

Planning & Development Services Department

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B.	PLANS <i>continued</i>			
4.	Listing of standard(s), edition, modifications/variances (if applicable) and special design features (include Code or Standard sections as applicable). IFC 102.6, 102.7, 104, IBC 101.4, 104, 106.1.1.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.	Submittal review: minimum NICET III CET or an Arizona Registrant, evidenced by signature/seal and date. 14.1.4.3 (46)*, IFC 901.2.3.*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.	Names and phone numbers: contractor; NICET/Registrant; whom to call to answer design questions. 14.1.4.3 (48)*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.	Seismic requirements. 9.3*, IBC.	<input type="checkbox"/>	<input type="checkbox"/>	_____
8.	Occupancy classification/use of each room/area. Ch. 5*, 5.4.3*, A.5 all, 6.2.4, 8.2.4, 8.2.5, 11.214.1.3 (7), Ch. 11, 12 & 13, IFC Ch. 2, IBC Ch. 2.	<input type="checkbox"/>	<input type="checkbox"/>	_____
9.	Special conditions/occupancy requirement. 8.14, Ch. 11, 12, 13, IFC, IBC.	<input type="checkbox"/>	<input type="checkbox"/>	_____
10.	Each sprinkler system's allowable square footage. 8.2.1, 8.13.1.	<input type="checkbox"/>	<input type="checkbox"/>	_____
C.	CALCULATIONS			
1.	Hydraulic calculations, per remote area, including: Ch. 11, 12, & 13, 14.1, 14.3, 14.4, IFC*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
	<input type="checkbox"/> Hazard	<input type="checkbox"/> Calculation nodes	<input type="checkbox"/> Area of Application	
	<input type="checkbox"/> Number of sprinklers calculated	<input type="checkbox"/> Density		
	<input type="checkbox"/> Coverage per sprinkler	<input type="checkbox"/> GPM per sprinkler	<input type="checkbox"/> K-factor	<input type="checkbox"/> Orifice size
	<input type="checkbox"/> Pipe size, inside	<input type="checkbox"/> Pipe lengths (center to center)		
	<input type="checkbox"/> Equivalent pipe lengths	<input type="checkbox"/> Friction loss in PSI per ft of pipe		
	<input type="checkbox"/> Friction loss between nodes	<input type="checkbox"/> Head loss between nodes		
	<input type="checkbox"/> PSI at each node	<input type="checkbox"/> Flow switch/backflow		
	<input type="checkbox"/> Total GPM required	<input type="checkbox"/> Pressure summary	<input type="checkbox"/> Hose streams	
	<input type="checkbox"/> Graph sheet	<input type="checkbox"/> Water supply information	<input type="checkbox"/> Safety factor	
	<input type="checkbox"/> Gridded systems peaked or supplemental calculations			
	<input type="checkbox"/> Extended coverage or other special listings limitations			

C. CALCULATIONS *continued*

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C.	CALCULATIONS <i>continued</i>			
2.	Prior approval for room design method. 11.2.3.3.5*.	<input type="checkbox"/>	<input type="checkbox"/>	___
3.	Justification for two sprinklers fed from an existing outlet (separate fire area or calculated). 8.14.19.4.3	<input type="checkbox"/>	<input type="checkbox"/>	___
4.	Increased calculation area due to unsprinklered compartments. 8.14.1.2, 11.2.3.1.8.	<input type="checkbox"/>	<input type="checkbox"/>	___
5.	Density increases/decreases for slopes/ceiling heights. 11.2.3.2.3, 11.2.3.2.4.	<input type="checkbox"/>	<input type="checkbox"/>	___
6.	Standpipe system calculations. NFPA 14, IFC 905.	<input type="checkbox"/>	<input type="checkbox"/>	___
7.	Calculations for access challenge hose valves. 8.16.5.2.3*, IFC 905.3.1.1*.	<input type="checkbox"/>	<input type="checkbox"/>	___
D.	SPRINKLER SPACING			
1.	Sprinkler head allowable calculated square footage, S x L. 8.5.2, 8.5.2.2, & 8.5.3, listing.	<input type="checkbox"/>	<input type="checkbox"/>	___
2.	Allowable calculated spacing to walls, ½ S or L, or small room rule – 9 feet. 8.5.3.2, 8.6.3.2.1, 8.6.3.2.4, listings.	<input type="checkbox"/>	<input type="checkbox"/>	___
3.	Minimum sprinkler head spacing. 8.5.3.2.1, listings.	<input type="checkbox"/>	<input type="checkbox"/>	___
4.	Sprinkler obstructions and clearances. 8.5.5, 8.5.6, 8.5.7, 8.6 through 8.12, listings.	<input type="checkbox"/>	<input type="checkbox"/>	___
5.	Sprinkler head layout for slopes/ 4:12 pitch. 6.2.3, 8.6.4.1.4.4.	<input type="checkbox"/>	<input type="checkbox"/>	___
6.	Sidewall sprinklers staggered or outside of spray pattern. 8.7.3.1.6.	<input type="checkbox"/>	<input type="checkbox"/>	___
E.	MISCELLANEOUS			
1.	Sprinkler temperature ratings. 8.3.2.	<input type="checkbox"/>	<input type="checkbox"/>	___
2.	Quick response sprinkler required. 8.2.5 amended, 8.3.3, IFC 903.3.2, listings.	<input type="checkbox"/>	<input type="checkbox"/>	___
3.	Sprinkler coverage at top of elevator shaft (if not current ASTM compliance) and in elevator pit. 8.14.5, 8.14.5.5.	<input type="checkbox"/>	<input type="checkbox"/>	___
4.	Sprinkler coverage at top of stairways (noncombustible stairways) and at stairway landings opening to two (2) fire areas. 8.14.3.2.1, 8.14.3.3.	<input type="checkbox"/>	<input type="checkbox"/>	___
5.	Sprinkler coverage under the first landing above the bottom of the shaft (noncombustible stairways). 8.14.3.2.1.	<input type="checkbox"/>	<input type="checkbox"/>	___
6.	Sprinkler coverage beneath all stairways of combustible construction. 8.14.3.1.	<input type="checkbox"/>	<input type="checkbox"/>	___

E. Misc continued

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E.	MISCELLANEOUS <i>continued</i>			
7.	Concealed space coverage except as allowed. 8.14.1, 17.4.4.1.	<input type="checkbox"/>	<input type="checkbox"/>	_____
8.	Sprinkler heads of a corrosion-resistant type. NOTE: Required where chemicals, moisture or other corrosive vapors can cause corrosion. 6.2.6.1, 6.2.6.4.	<input type="checkbox"/>	<input type="checkbox"/>	_____
9.	Sprinkler coverage under combustible canopies, canopies used for storage, combustible overhangs over 4 feet, and exterior covered exit ways. 8.14.7*, 8.14.7.2*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
10.	Sprinkler coverage beneath overhead doors. 8.5.5.3	<input type="checkbox"/>	<input type="checkbox"/>	_____
11.	Dry pendent sprinkler heads in walk-in coolers/freezers. 8.14.11, 8.15.3.1.1.	<input type="checkbox"/>	<input type="checkbox"/>	_____
12.	Sprinkler protection for attics in 13-R system. IFC 903.3.1.2.3*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
13.	Patio and balcony protection in 13R systems. IFC 903.3.1.2.1*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
F.	PIPING, VALVES, FITTINGS			
1.	Fire sprinkler riser assembly detail per City of Scottsdale detail 2368 or 2369. 8.16.6.6.3*, 15.1.8, IFC 903.3.5 and 903.4.	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.	Floor control valves. 8.15.1.1.1.1*	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	Drain pipes & inspectors tests terminate to the exterior or approved location. 8.15.2.4.4, 8.15.2.6.	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.	Inspectors test pipe, location and connection to system. 8.16.4.2.1*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.	Exterior exposed piping 2 inch minimum or insulated in an approved manner. 8.15.3.1.3, 8.15.3.1.4*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
G.	OTHER			
1.	Bell. 6.9.6*, 8.16.1*, IFC 903.4.2*.	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.	Third party monitoring. IFC 903.4, exception #2*	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	The professional registrant in charge or fire code official may require a technical opinion and report, prepared by a qualified party, and/or a professional registrant activities report containing all professional registrant duties as assigned by the State Board of Technical Registration, with seal and signature of an Arizona Registrant, who is qualified in fire sprinkler design, to accompany the plan submittal. IFC 104.7.2, IBC 106.1, 106.3.4.1.	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.	The professional registrant in charge is responsible to coordinate deferred submittals, professional registrant activities, technical assistance reports, modifications, alternative materials and methods, and to determine that the deferred submittal documents are in general conformance to the design of the building. IFC 104, IBC 104, 106.3.4.	<input type="checkbox"/>	<input type="checkbox"/>	_____

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